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10/563,837	07/10/2006	Franz Stuhlbacher	P29081	3504
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EXAMINER				
BECKER, JOHN E				
ART UNIT		PAPER NUMBER		
4177				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/563,837

Applicant(s)

STUHLBACHER ET AL.

Examiner

JOHN BECKER

Art Unit

4177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2007.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-24 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 5-24 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 26 April 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-893)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date 7/10/2006

DETAILED ACTION

1. This is in response to the application and preliminary amendment filed on 1/19/2006 and the preliminary amendment filed on 4/26/2007.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 16-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Per claim 16, claim 16 states that a "first sliding block and a second sliding block comprise hinges". It is unclear whether the applicant intended the word "comprise" to mean "include" as in "the first and second blocks 'include' hinges" or if the applicant intended "comprise" to mean "form" as in "the first and second blocks 'form' hinges". As such, claim 16 is indefinite.

The examiner reads "comprise" to mean "include" in the analysis below.

Per claim 17, claim 17 states that the "first sliding block and the second sliding block are adjustable in height". It is unclear whether the applicant intended for the guide space for the foil in the sliding blocks to be adjustable in height (i.e. adjustable for different foil sizes) or if the applicant intended for the guide blocks themselves to be adjustable between a larger and smaller size. As such, claim 17 is indefinite.

The examiner reads "adjustable in height" to mean that "the guide space for the foil is adjustable in height" in the analysis below.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 5 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Szego (4,144,624).

Per claim 5, Szego discloses a device for producing expanded flat material, comprising: a first conveyor (81) structured and arranged to guide a first lateral edge of a web (58) vertically upward with respect to a horizontal plane; and a second conveyor structured (82) and arranged to guide a second lateral edge of the web (58) vertically downward with respect to the horizontal plane, wherein a spacing between the first conveyor and the second conveyor increases in a direction of advancement of the web, (Fig 4, col 6, lines 34-38). (Note: The examiner defines the "horizontal plane" as the plane of the foil web upon entrance to the expanding section of the device. This is equivalent to the "starting plane" of the web in the applicant's invention as shown in Figure 1 of the application).

Per **claim 23**, Szego discloses a method, comprising: gripping a first lateral edge of a foil web (58); gripping a second lateral edge of the foil web (58); expanding the foil web (58) between the first lateral edge and the second lateral edge by guiding the first lateral edge vertically upward from a horizontal starting plane while guiding the second lateral edge vertically downward from the horizontal starting plane, (col 6, 34-38, lines 46-59, Fig 4).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. As best understood, Claims 6-20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szego (4,144,624) as applied to claims 5 and 23 above, and further in view of Schrenk (4,621,397).

Per **claim 6**, Szego discloses an expanding device that includes the first conveyor and the second conveyor (Abstract), but is silent concerning a coiling device and describes a pre-slit coil of foil web (58), (col 4, line 65, Fig. 4).

However, Schrenk, drawn to a method and apparatus for making an expanded metal sheet, discloses a cutting device (2, 3) and a coiling device (14), (Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the pre-slit coil of Szego with the cutting device of Schrenk, because a person of ordinary skill in the art would recognize that slitting the foil web within the device or supplying the line with a pre-slit foil web would lead to the same slit foil entering the expansion device and obviate the need to buy a pre-slit foil or manufacture it in a different manufacturing line.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the expansion device of Szego with the coiling device of Schrenk, because once said foil web had been expanded, it would need to be coiled for collection and storage purposes.

Per claim 7, Szego and Schrenk disclose that the web comprises a foil web, (Abstract of Szego, Abstract of Schrenk).

Per claim 8, Szego and Schrenk disclose cutting rollers (Schrenk 2, 3) supported one above the other; upper smooth cutting knives (Schrenk 17); lower cutting knives (Schrenk 18); and recesses (Schrenk 18b), wherein the web is structured and arranged to be guided through the cutting rollers, (Schrenk col 4, lines 38-49, Fig. 1, Fig. 7).

Per claims 9-11, Szego discloses a first conveyor comprising a grooved belt and a blade-like belt (col 7, lines 33-47) wherein a first belt pair and the second belt pair are guided over a sprocket and pulleys (col 7, line 33 – col 8, line 28). Since the belt rolls on the pulleys and the belt is deflected by the pulleys, the pulleys are "deflection rollers" and since the belt rolls on and is driven by the sprocket, the sprocket is a "driven deflection roller".

Szego does not disclose the first conveyor comprising a first toothed belt pair, and the second conveyor comprising a second toothed belt pair.

However, Schrenk, a reference in the art of expanded metal-making, discloses a conveyor comprising a first toothed belt pair (9, 9'), the second conveyor comprising a second toothed belt pair (9, 9') over deflection rollers (13), "the lowermost roller serving as driving pulley," (col 3, lines 52-53; Fig 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the conveyor of Szego comprising a sprocket/driven deflection roller, pulleys/deflection rollers, grooved belt, and blade-like belt in view of the conveyor of Schrenk comprising deflection rollers, one of which is driven, and a toothed belt, because both systems produce the same result of conveying the foil web along the expansion arms of Szego. In addition, one of ordinary skill in the art at the time of the invention would have been motivated to utilize the conveyor of Schrenk because of the added benefits that the "metal foil would be seized and clamped along its edges between respective upper and lower toothed belts," (col 2, lines 13-16), and the conveyor of Schrenk could "produce expanded metal from thicker aluminum foils," (col 1, lines 32-33).

Per **claim 12**, Szego and Schrenk disclose the first toothed belt pair (Schrenk 9, 9') holds the first lateral edge using first teeth, and the second toothed belt pair holds the second lateral edge using second teeth (Schrenk 9, 9'), (Schrenk col 3, 49-52, Fig. 1).

Per **claim 13**, Szego and Schrenk disclose a first sliding block (Szego 264) guiding the first toothed belt pair (Schrenk 9,9'); and a second sliding block (Szego 264) guiding the second toothed belt pair (Schrenk 9, 9'), (Szego, Fig.'s 16 and 17).

Per **claim 14**, Szego and Schrenk disclose the first sliding block (Szego 264) arranged in an interior area of the first toothed belt pair and the second toothed belt pair, (Szego, Fig. 17).

Per **claim 15**, Szego and Schrenk disclose that the web (58 in Szego) comprises a foil web, and as the spacing between the first conveyor and the second conveyor increases in the direction of advancement, the foil web is expandable across a diagonal extending from the first lateral edge to the second lateral edge, (Abstract, Fig. 4, Fig. 11 in Szego).

Per **claim 16**, Szego and Schrenk disclose that the first sliding block (Szego 264) and the second sliding block (Szego 264) comprise hinges (The sliding block (Szego 264) is attached to a guide block (Szego 273) said guide block being secured to a necked portion (Szego 271) on a post (Szego 267) through said guide block. The guide block (Szego 273) is rotatable about the post (Szego 267), so this constitutes a hinge, (Fig 16).)

Per **claim 17**, Szego and Schrenk disclose the first sliding block (Szego 264) and the second sliding block (Szego 264) are adjustable in height (The central slot (Szego 274) can be held by a pin (Szego 276) or not ("[a] split pin 276 may be passed..." Szego col 12, lines 44-47). This makes the sliding block (Szego 264) adjustable in height.)

Per **claim 18**, Szego and Schrenk disclose the first sliding block (Szego 264) is vertically displaceable to inside the first toothed belt pair (Schrenk 9, 9') because said sliding block is vertically displaceable, as discussed per claim 17 above, and because it is inside the first toothed belt pair (9, 9' Schrenk), (Szego, Fig. 16).

Per **claim 19**, Szego and Schrenk disclose the first sliding block (Szego 264) comprises a first flat-plane sliding surface, the second sliding block (Szego 264) comprises a second flat-plane sliding surface, and the first flat-plane sliding surface and the second flat-plane sliding surface are structured and arranged to expand the web by gradually increasing the spacing between the first conveyor and the second conveyor in the direction of advancement, (col 6, 34-38, lines 46-59, Fig 4, col 12, lines 21-27, Fig 16).

Per **claim 20**, Szego and Schrenk disclose the first sliding block (Szego 264) comprising a first sliding surface having a first radius, the second sliding block (Szego 264) comprising a second sliding surface having a second radius, and the first sliding surface and the second sliding surface are structured and arranged to expand the web by gradually increasing the spacing between the first conveyor and the second conveyor in the direction of advancement, (col 6, 34-38, lines 46-59, Fig 4, col 12, lines 21-27, Fig 16).

Per **claim 24**, Szego discloses a pre-slit foil web, but does not disclose cutting the foil web or coiling it.

Schrenk, however, discloses cutting portions of the foil web (7) between the first lateral edge and the second lateral edge before the expanding (col 3, lines 15-24); and coiling the foil web (Schrenk) after the expanding (col 3, 32-34, Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the pre-slit coil of Szego in view of the cutting device of Schrenk, because a person of ordinary skill in the art would recognize that slitting the foil web within the device or supplying the line with a pre-slit foil web would lead to the same slit foil entering the expansion device.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the expansion device of Szego in view of the coiling device of Schrenk, because once said foil web had been expanded, it would need to be coiled for collection and storage purposes.

8. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szego (4,144,624) in view of Schrenk (4,621,397)

Per claim 21, a discussion of the disclosures of Szego and Schrenk and why the combination of said references is obvious can be found in items #6, and 8 above.

Szego and Schrenk disclose a first belt pair (Schrenk 9,9') structured and arranged to hold a first lateral edge of a web (Szego 58) between first teeth (Schrenk 19, 19'); a second belt pair (Schrenk 9, 9') structured and arranged to hold a second lateral edge of the web between second teeth (Schrenk 19, 19'); first deflection rollers (Szego 128, 129 or Schrenk 13) and a first slide block (Szego 264) that guide the first

belt pair (Schrenk 9, 9') to a vertically upward position (along arm 81 in Szego) with respect to a horizontal starting position (labeled as the foil web plane when entering the expander in Szego); and second deflection rollers (Szego 128, 129 or Schrenk 13) and a second slide block (Szego 264) that guide the second belt pair (Schrenk 9, 9') to a vertically downward position (along arm 82 in Szego) with respect to the horizontal starting position, wherein the web (Szego 58) is expandable between the first lateral edge and the second lateral edge along a diagonal between the vertically upward position and the vertically downward position, (Szego Fig 4, Fig 11, Fig 16, Fig 17, Schrenk Fig 1, Fig 4).

Per **claim 22**, the web (58 in Szego) comprises a foil web (Abstract Szego), and the apparatus further comprises: cutting rollers (Schrenk 2,3) having cutting knives (Schrenk 17, 18) for passing the foil web (Szego 58) through to form cuts in the foil web; at least one drive element (Szego 127 or Schrenk 13) driving the first belt pair (Schrenk 9, 9') and the second belt pair (Schrenk 9, 9'); and a coiling device (Schrenk 14), (Szego Fig. 4, Schrenk Fig. 1, Fig. 7, col 3, lines 52-53).

Relevant Prior Art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

All of the prior art below disclose apparatuses for expanding a slit foil web using diverging arms that grip each side of the foil and expand it at a diagonal.

Cross (2,106,967); Salmon (Re 16,504); Curtis (917,705); Curtis (796,402)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN BECKER whose telephone number is (571)270-7536. The examiner can normally be reached on Monday-Friday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sam Yao can be reached on 571-272-1224. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

November 13, 2008
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